

## ABSTRACT

In the step of thermally processing a semiconductor substrate by irradiating the semiconductor substrate with lamp light, a free carrier absorption layer for absorbing the irradiated lamp light is provided in advance in the semiconductor substrate. Thus, it is possible to increase the temperature controllability in a low temperature range during an RTP process, and to reduce, at a low cost, variations in the substrate temperature not only in a low temperature range but also in a processing temperature range. As a result, semiconductor devices that require precise thermal processing can be fabricated without degrading the characteristics of the resulting semiconductor devices.